DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT

Kelly Bar Habitat Enhancement Project
U.S. Forest Service
Salmon/Scott River Ranger District
Klamath National Forest
Siskiyou County, California

The Kelly Bar Habitat Enhancement Project was developed in response to the need for increased high quality rearing and spawning habitat for Endangered Species Act (ESA)-listed Southern Oregon Northern California Coast coho salmon and other anadromous fish in the Kelly Bar Project area. As a federal land management agency, the Forest Service has a responsibility for actively carrying out programs for the conservation of endangered species and threatened species [§ 7(a)(1) of the Endangered Species Act of 1973 (as amended)]. This project would implement several actions described as *Highest Priority Recovery Actions* in the Southern Oregon Northern California Coast coho salmon Recovery Plan (NMFS, 2014): 1) Increase large woody debris (LWD), boulders, and other instream structures, and 2) Construct off-channel habitats, alcoves, backwater habitat, and old stream oxbows.

DECISION

Based upon my review of the Kelly Bar Habitat Enhancement Project Environmental Assessment (EA), I have decided to implement Alternative 2, which will immediately increase the abundance of complex off-channel rearing habitat for year-round rearing of juvenile salmonids in the project area by providing both high-flow and thermal refugia.

This alternative will improve the connectivity to side channels, enhance side channels, and create alcoves on Kelly Bar and West Bar (across the river), as well as enhance two off-channel ponds on Kelly Bar. Treatments will include excavation of channels, alcoves, and ponds, constructing engineered log jams and small wood habitat features, diverse riparian planting, and cattle fencing, see Project Area Map (Appendix A). For a detailed description of the analysis used to develop this project refer to the *Kelly Bar Off-Channel Fisheries and Riparian Habitat Enhancement Project – Basis of Design Report* (Michael Love and Associates, 2016).

This alternative will construct three fully engineered instream structures that consist of multiple large diameter (1-foot to 3.5-foot diameter breast height) logs, some with rootwads intact, at the inlets of the side channels on Kelly Bar and West Bar along the North Fork Salmon River. Multiple, smaller structures with large diameter logs (up to three logs each) will be placed along the side channels and within the ponds as fish habitat features. The side channels will be enhanced by excavation of the channels and alcoves, as well as brush baffles and diverse riparian planting of native vegetation along the channels. Two ponds will be enhanced by excavation on Kelly Bar; Kelly Pond and Willow Pond (see Project Area Map, Appendix A). A boulder weir will be constructed at the outlet of Kelly Pond. All structures will be built and anchored in compliance with Chapter VII of the California Department of Fish and Wildlife (CDFW) Habitat Restoration Manual (Flosi et al., 2010) and through the guidance of the CDFW grant manager for this project.

DECISION RATIONALE

My rationale for choosing the selected alternative, as it responds to the purpose and need of the project (page 2 of the EA), is described below.

Two alternatives were considered in detail in the Environmental Assessment for the Kelly Bar Habitat Enhancement Project. In addition to the selected alternative (alternative 2), I considered alternative 1 (no action). Under the no action alternative, there will be no improvement to fish habitat or riparian conditions within the project area. If no action is taken, Kelly Bar and West Bar will continue to have degraded habitat complexity lacking off-channel habitat and riparian vegetation, providing poor refugia for all life stages of salmonids.

The selected alternative complies with all applicable laws and regulations and is consistent with the Klamath National Forest Land and Resource Management Plan (Forest Plan, 1995 as amended). This alternative is designed to reflect specific direction within the Aquatic Conservation Strategy of the Forest Plan by proposing actions that are proactive in maintaining and restoring watershed processes as well as the species that depend upon high quality aquatic habitat. I believe that the EA appropriately details and adopts all practical means to avoid or minimize environmental harm.

The selected alternative was designed to achieve restoration of specific aquatic and riparian processes at the site by:

- Creating self-sustaining side-channels with off-channel alcoves for high-flow off-channel refugia. The channels will be self-maintaining, since they will receive flows frequently enough to scour out fine sediments from the channels and alcoves. Engineered log jams will protect the inlets from scour, limit the amount of flow entering the side channels, and reduce the possibility of river channel alignment shifts.
- Providing off-channel high-flow and thermal refugia using groundwater-fed ponds and exploiting hyporheic (i.e., groundwater just under the surface of the floodplain which interacts with surface flows) flows in alcoves. Kelly Pond and Willow Pond will be maintained by cooler groundwater to a depth of 3 to 4 feet. The ponds will have seasonal channel outlets, disconnecting the ponds from surface flows slowly as they subside. The project will increase over-winter rearing habitat by providing slow water rearing habitat in side channels and pools. Large wood structures and revegetation will provide cover and a food sources for juvenile salmonids.
- Increasing in-channel bed complexity using large wood features. Small wood structures along the side channels will direct flows within the side channels, creating localized scour pools for energy dissipation and gravel sorting and will rack additional woody material, further increasing the habitat diversity of the project area. Increased channel complexity and reduced water velocity will result in better sorting of gravels, improving spawning habitat and capturing fine sediment for future vegetation recruitment.
- Creating large wood complexity in off-channel habitats. This project will provide for a wide range of habitat heterogeneity for juvenile and adult salmonids within the project

area. Additionally, diverse riparian planting will result in increased shade, direct flows to enhance side channel stability and result in future large woody debris. Large wood complexity and enhancement of side channels, alcoves, and ponds will provide for increased fish habitat functionality and connectivity.

- Increasing riparian shading to reduce summer water temperatures. By enhancing riparian vegetative shading and hyporheic flow, this project will cool flows into the North Fork Salmon River, primarily at the alcoves of the side channels, benefiting both anadromous fisheries recovery and TMDL implementation goals.
- Improving connectivity of Kelly Gulch with the river for fish ingress and egress. Excavation of the cobble bar near the mouth of Kelly Gulch will enhance connectivity to the North Fork Salmon River. The project will enhance hydrological linkage between the main channel and off-channel areas, and will reduce the potential for future degradation.
- Aiding in recovery of fish habitat, riparian habitat, and water quality at the site through enhancing the Kelly Bar and West Bar floodplains. The lack of habitat complexity inherent in much of the Salmon River, is currently limiting the potential for the recovery of coho and spring Chinook salmon and other anadromous fish populations in a watershed that has tremendous potential for providing a long-term refuge for such species as climate change progresses. The proposed project will result in improved habitat complexity during all life stages of the salmonid life cycle through implementing a diverse range of enhancement treatments that will interact with the river during a wide range of flows.
- Providing valuable insight into how specific features of the project perform and provide refugia for fisheries, which will inform future restoration projects on the Salmon River. Extensive restoration effectiveness monitoring will be conducted for this project, which will be used to evaluate the effectiveness of the restoration treatments, as well as for developing future restoration projects.

I believe the EA presents an objective and well-documented analysis of environmental effects expected to result from implementation of the selected alternative. The analysis, including interrelated and interdependent actions, shows that the scenario depicted by the selected alternative can effectively meet the purpose and need and restore the project area, while resulting in a Finding of No Significant Impact (FONSI). My conclusion is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

The Kelly Bar Habitat Enhancement Project EA documents the environmental analysis and conclusions upon which this decision is based.

PUBLIC INVOLVEMENT

The proposal was posted on the Forest website and first listed in the Schedule of Proposed Actions on October 1st, 2017. On October 13th, 2017, the proposal was mailed to nearby landowners or claim owners, to four tribes, the United States Fish and Wildlife Service, the National Marine Fisheries Service, Siskiyou County, and to the North Coast Regional Water Quality Control Board for a 15-day public scoping period from October 19th, 2017 to November 2nd, 2017. One comment was received during the scoping period by email, the comment was in opposition to the proposed action due to the history of disturbance within the project area, and the history of restoration projects effectiveness within the Salmon River area (see Appendix E of the EA for a response to the scoping comment received). A letter of inquiry from members of the public opposed to restoration actions on the Salmon River was submitted outside of the scoping period, contact has been made with individuals on this list, and opportunity for follow up comments was provided during the 30-day public comment period on this EA. This project was discussed in the Salmon River Restoration Council's (SRRC) 2016 fall newsletter, the SRRC 2016 Annual Report, the SRRC Salmon River In-Stream Restoration Open House, which occurred on November 3rd, 2017, and the Salmon River Currents July 2018, SRRC's e-newsletter, which was also shared on SRRC's Facebook page; all of these were accessible to the public.

On June 26th, 2018, notice of a 30-day public comment period was mailed to nearby landowners or claim owners, interested members of the public, to four tribes, the United States Fish and Wildlife Service, the National Marine Fisheries Service, Siskiyou County, and to the North Coast Regional Water Quality Control Board; the comment period occurred from June 29th, 2018 to July 28th, 2018. Hardcopy announcements were posted at four locations within the project area. A public meeting onsite was held on July 21st, 2018. Thirteen individuals attended the onsite public meeting. At that meeting, one community member verbally expressed concern with the proposed action. The concerns expressed related to doubt regarding the actions having the intended beneficial effect to fish habitat, and concern that more disturbance in or near the river may have an unintended negative effect on cold water fish habitat at this site. During the public comment period a total of fourteen comments were received, including two comments received after the end of the legal comment period. Thirteen comments were supportive of the project and one comment was opposed to the project. See Appendix E of the EA for a summary of comments received and a response to the oppositional comment.

On September 5, 2018 a letter was sent to agencies, tribes and interested and affected individuals to notify all parties of the Kelly Bar Habitat Enhancement Project Objection Period which began on September 7, 2018 and lasted for 45 days. A legal notice was filed in the Siskiyou Daily News on September 7, 2018 officially starting the objection filing period. No objections to the Project were received during the objection filing period.

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

This decision is consistent with the Klamath National Forest Land Management Plan. The project was designed in conformance with the Aquatic Conservation Strategy. The project is covered under the programmatic US Army Corps of Engineers Clean Water Act section 404 Regional General Permit 12, which includes Section 7 consultation for the Endangered Species

Act. A Water Quality Certification (Clean Water Act section 401) is in progress and a Construction General Permit Waiver has been received from the State Water Resources Control Board. Project implementation will not be initiated until all required permits have been completed. California Environmental Quality Act review has been completed for this project. A Section 1600 Streambed Alteration Agreement with California Department of Fish and Wildlife is in progress; though it is not required on federally managed lands, it is required by the funding agency.

A Finding of No Significant Impact (FONSI) and EA were considered. I determined these actions will not have a significant effect on the quality of the human environment, and an Environmental Impact Statement (EIS) will not be prepared.

FINDING OF NO SIGNIFICANT IMPACT

The significance of environmental impacts must be considered in terms of context and intensity. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human and national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. In the case of a site-specific action, significance usually depends upon the effects in the locale rather than in the world as a whole. Intensity refers to the severity or degree of impact. (40 CFR 1508.27)

CONTEXT

For the proposed action, the context of the environmental effects is based on the environmental analysis in the EA. The project area covers approximately 12 acres, along 1,850 feet of the North Fork Salmon River near the Kelly Gulch confluence.

INTENSITY

The intensity of effects was considered in terms of the following:

1. **Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that, on balance, the effect will be beneficial.**

   The selected alternative has both beneficial and adverse effects, as discussed in the analysis summarized in the EA and fully addressed in specialist reports. The potential adverse effects would occur only during the time of implementation and may affect only a few individual fish. The beneficial effects of implementing the selected alternative would occur immediately and are likely to persist in the long-term. The benefits are designed to last about 25 years. However, the features are designed to be self-sustaining. Therefore, habitat benefits may last much longer than the design life of the project. Beneficial effects include enhancing salmonid and riparian habitat along 1,850 feet of the North Fork Salmon River (about 4 acres of off-channel habitat). Implementing the selected alternative moves the area closer to the desired future condition as described in the Forest Plan and Aquatic Conservation Strategy. Both the potential adverse and

beneficial effects have been described in the EA and beneficial effects have not been used to offset or compensate for adverse effects.

2. **The degree to which the proposed action affects public health or safety**.

   There will be no significant effects on public health and safety because: (1) implementation of alternative 2 will not produce enough dust to see effects beyond the immediate local vicinity and any smoke produced will be very minimal and localized, air quality standards will be met; (2) Best Management Practices for the protection of water quality will be implemented (EA, Appendix B); (3) There will be no effects to hillslope stability regarding heavy equipment access to the sites; (4) the probability of disturbing naturally occurring asbestos is extremely low; and (5) wood structures replicate naturally occurring features within the river system, they would not create an unnatural safety risk for aquatic recreation enthusiasts.

3. **Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

   No parklands, prime farmlands, wetlands, or ecologically critical areas are documented in or near the project area.

   There will be no significant effects on unique characteristics of the area. There are signs of historical mining activity in the project area, however the proposed action will not affect the condition of heritage resources to the extent that they will no longer be eligible for the National Register of Historic Places. Project design features have been incorporated into the project design to significantly reduce the risk of adversely affecting heritage resources. The project area is within the Wild and Scenic corridor of the North Fork Salmon River. The outstandingly remarkable value for the river is fisheries. There will be a positive benefit to fisheries resources and habitat (See Fisheries Resources section of the EA), therefore the outstandingly remarkable values will be benefited by this project. The visual effects of this project will be noticeable from the North Fork Salmon River during and immediately after project implementation. These will be subordinate to the overall landscape within three years of implementation and will not be noticeable after about ten years once the vegetation has fully recovered.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.**

   The term "controversial" in this context refers to cases where substantial scientific dispute exists as to the size, nature, or effects of a major Federal action on some human environmental factor, rather than to public opposition of a proposed action or alternative. The Forest considers relevant available science when ensuring the scientific integrity of the discussions and analyses in the project NEPA document. The project record (including specialist reports, other supporting documentation, and the EA) documents all scientific information considered and results of field observations were considered to ensure the use of relevant science for this project and analysis. A certain amount of disagreement over the selected alternative exists, as reflected in the scoping comments, these comments were addressed, and the response can be found in the EA. There is no

known credible scientific controversy over the impacts of the proposed action. Restoring off-channel fisheries and riparian habitat to the Kelly Bar and West Bar is an action that has a low risk of being controversial due to the expected benefits to fisheries habitat. The project will have no impact on domestic water use or availability.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.**

   The outcome of projects such as the proposed action are fairly certain and do not involve unique or unknown risks. The project was designed in compliance with Chapter VII of the California Department of Fish and Wildlife (CDFW) Habitat Restoration Manual (Flosi et al., 2010) and through the guidance of the CDFW grant manager for this project (see EA page 4). Such methods are considered standard practices, which have been applied with much success and low risk through CDFW's Fisheries Restoration Grant Program. Off-channel river restoration projects, similar to this project, have been implemented on neighboring National Forests and throughout the west in similar river types.

   Additionally, monitoring and reporting will occur annually each year for three years following construction of the project. The report will summarize monitoring activities, findings, and recommendations. The annual report will also identify any issues that may warrant maintenance or other types of treatment or adaptive management. In the event that items of concern arise, the report will recommend actions to be initiated to further characterize its impact on project objectives or consultation with the project team members or other agencies, to determine if a maintenance action is warranted. Restoration effectiveness will be evaluated through pre- and post-monitoring including changes to fish habitat (winter and summer refugia, cover, food sources, temperature, and dissolved oxygen), fish observations (primarily salmonids), avian observations (primarily neotropical migratory species), natural vegetative recruitment, revegetation success, and non-native invasive species (priority noxious weeds and bullfrogs). (See EA page 5).

6. **The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.** The proposed action will not establish a precedent and does not represent a decision in principle.

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

   The EA found that short term watershed disturbance caused by implementing the proposed action will be very minor because so few acres within the watershed will be disturbed. The disturbance caused by implementation of the proposed action will increase cumulative effects a very slight amount. The increase in cumulative watershed effects was too small to model with any statistical significance. (See Water Quality and Fisheries Resources sections of the EA). The cumulative impacts of this project with other projects that are either ongoing or reasonably foreseeable were analyzed for each affected resource and are not significant (See cumulative effects sections for each resource in the EA).

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed, or eligible for listing, in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

   The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places and will also not cause loss or destruction of significant scientific, cultural, or historical resources because the use of project design features would prevent any direct effects to the archaeological site (See Heritage Resources section of the EA).

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.**

   Fisheries: The only fish species or habitat listed under the Endangered Species Act that may be affected by this project is coho salmon and their designated critical habitat. While the ESA determination for coho salmon under the selected alternative states that the project *may affect, and is likely to adversely affect* the species, this impact is not significant in terms of NEPA analysis. In the context of ESA determinations, 'effect' refers to behavioral or physiological responses that are outside the typical range of species responses under normal conditions. This determination under ESA relates to the potential for an individual animal to exhibit an altered behavioral pattern during project implementation (referred to as harassment under ESA), a risk that is further reduced with the incorporation of project design features, but may not be completely avoided. If ESA-listed coho salmon are present at the time of implementation, they may be subject to harassment and moved away from the site which constitutes an adverse effect under ESA. This short term adverse effect would involve at most a few individuals. However, any detrimental effects would be localized and would impart no consequential impact to coho and coho Critical Habitat. This significance factor in regards to NEPA analysis is evaluated in terms of the project area being capable of supporting recovery of ESA-listed species and their habitat. This alternative would enhance ESA-listed habitat and allow the project area to become more capable to support overall viability of the species as a whole and meet habitat objectives in the long term.

   Wildlife:

   Northern spotted owl: No effects to northern spotted owl are expected to result from implementation of the proposed action. Potential disturbance during the breeding season will be avoided by use of project design features for noise disturbance (WL-1). The proposed action will result in no measurable change to canopy closer or forest fragmentation. No suitable northern spotted owl habitat will be degraded, downgraded, or removed. Further, no adverse impacts to the existing habitat for northern spotted owl prey species are expected. Therefore, the proposed action will not result in any short- or long-term effects to northern spotted owl. The proposed action will have *no effect* on northern spotted owl or designated Critical Habitat.

   Gray Wolf: Due to the small project footprint relative to the large home range size of gray wolf, the proposed action will not alter enough habitat to have any impact on the

species. Further, gray wolf is highly mobile and capable of avoiding project-related disturbance. Therefore, the proposed action will have *no effect* on gray wolf.

North American Wolverine: All proposed construction activities within the project area will occur in only very small portions of wolverine habitat and will be conspicuous enough as to likely be avoided by the species. Further, the project will not modify suitable wolverine habitat. The proposed action will have *no effect* on North American wolverine.

Plants: No federally listed threatened, endangered, or proposed plant species are documented or suspected to occur in the project area. Implementation of the selected alternative will have no effect on these species. See chapter 3 of the EA and the Botanical Resources Report for more information.

10. **Whether the action threatens to violate Federal, State, or local law or requirements imposed for the protection of the environment**.

    The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA (See compliance section for each resource in the EA). The action is consistent with the Klamath National Forest Land and Resource Management Plan (See EA page 3).

After considering the effects of the actions analyzed, in terms of context and intensity, I have determined that these actions will not have a significant effect on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

OBJECTION OPPORTUNITIES

A draft decision notice and finding of no significant impact was circulated for administrative review for the 45-day objection filing period. No objections were filed. No further review from any other Forest Service or USDA official of the reviewing officer's written response to an objection is available. 36 CFR 218.11.

IMPLEMENTATION DATE

Implementation of the decision may begin immediately following notice of the final decision to interested and affected parties pursuant to the conditions and requirements listed above.

CONTACT

For additional information concerning this decision, contact: Maija Meneks, Salmon/Scott River Ranger District Fisheries Biologist, by email at mmeneks@fs.fed.us, or by phone at 530-468-1272.

11/15/2018

Ruth D'Amcio
Acting District Ranger, Salmon/Scott River Ranger District — Date

APPENDIX A – PROJECT MAP

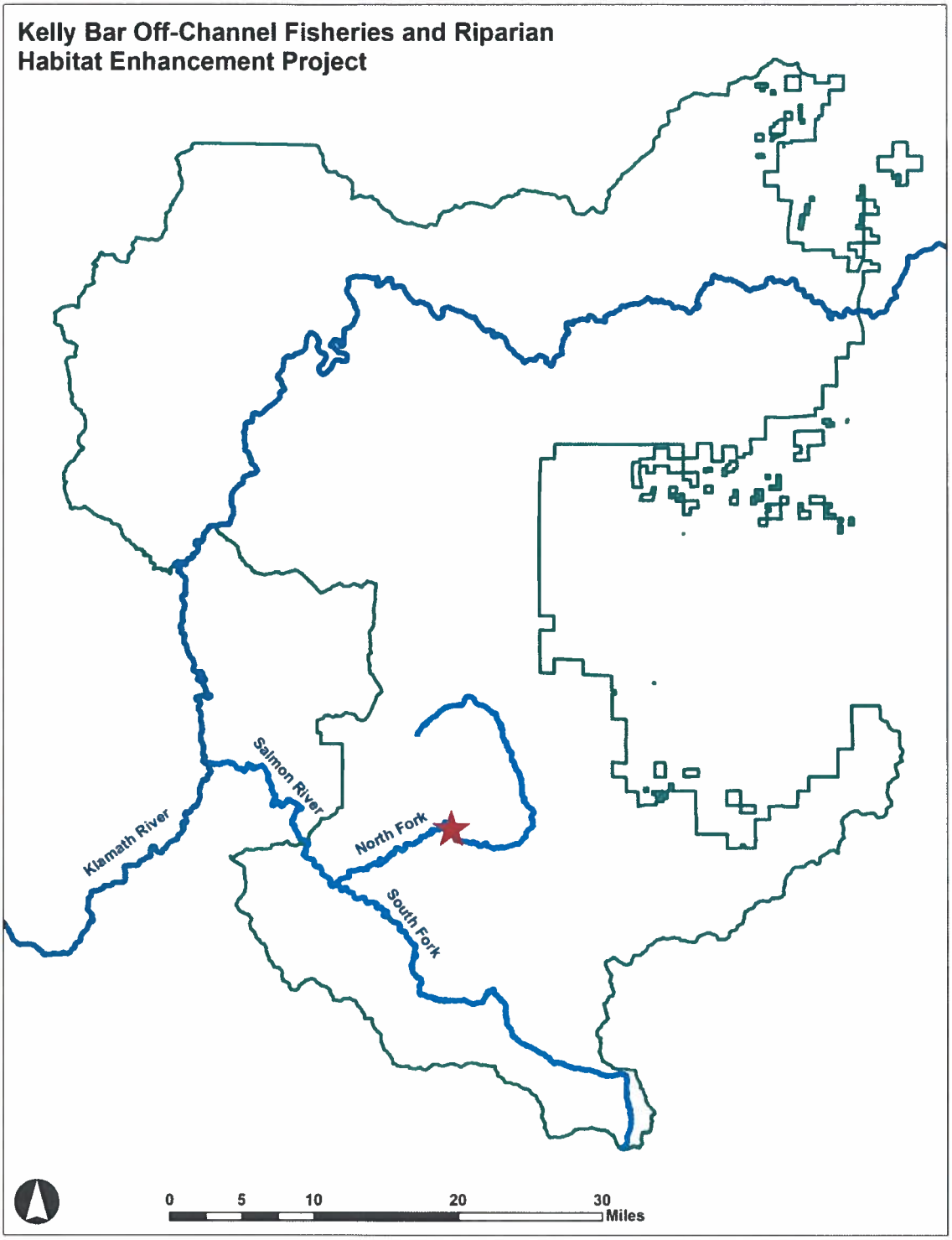

Figure 1: Vicinity map showing the project area relative to the Forest boundary.

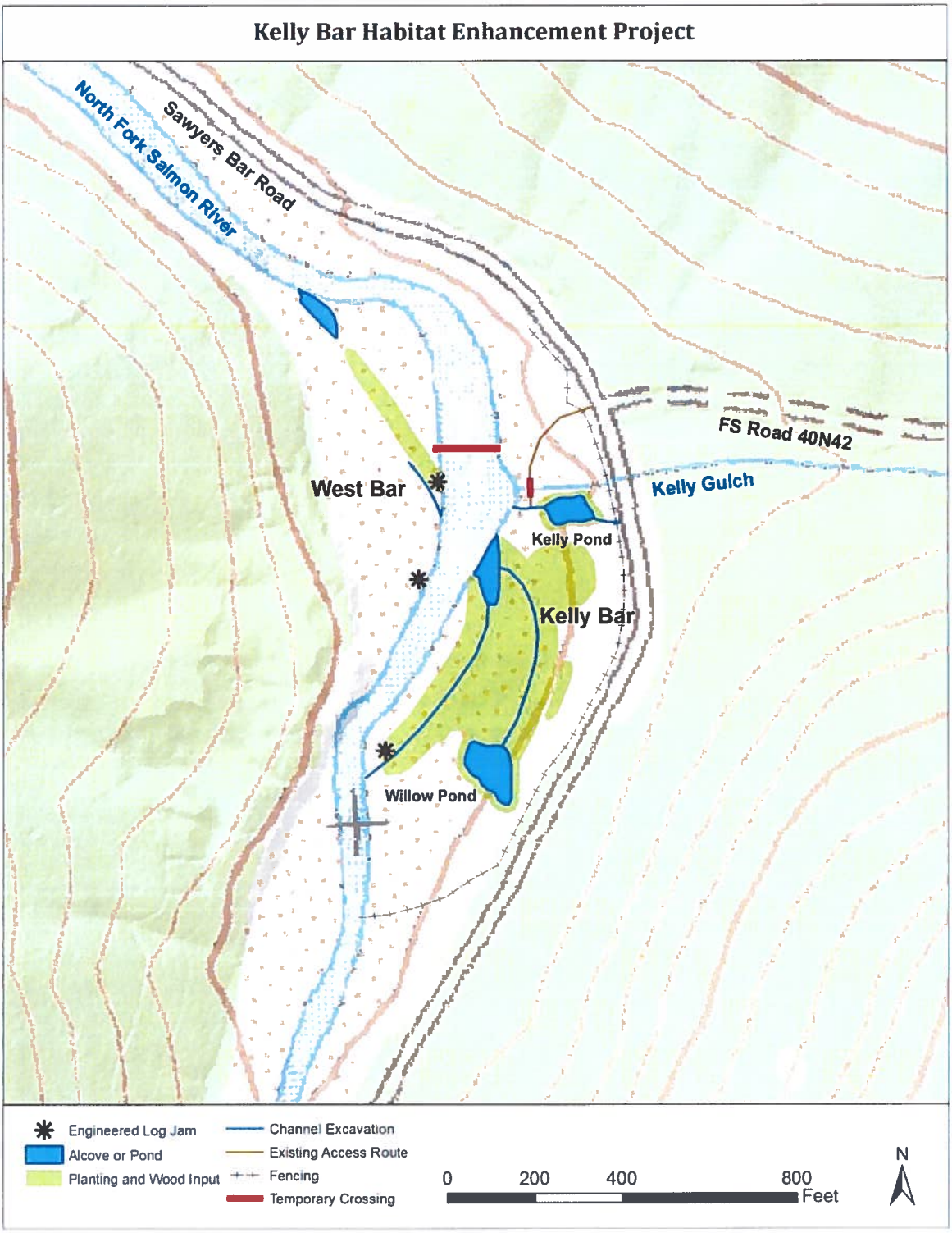

Figure 2: Project area map.

APPENDIX B – PROJECT DESIGN FEATURES

Project design features specific to this project, developed prior to and after scoping, will be used as a part of the proposed action to minimize or eliminate negative effects to resources in the project area. Specific best management practices (BMPs) that will be followed are listed in Appendix B of the EA. Design features listed in Table 1 are listed under the resource for which they are intended to mitigate effects.

Table 1: Project Design Features incorporated into Alternative 2.

Design Feature	Description
AIR-1	Dust control measures will be implemented to minimize dust generation and effects to visibility to drivers on the Forest Road.
Aquatics-1	The two enhanced ponds will be monitored for the life of the ponds, if water quality is determined to be detrimental to salmonid health (e.g., temperature or dissolved oxygen), they will be re-evaluated and altered to provide seasonal high flow refugia for salmonids.
ARCH-1	All sites within the area of potential effects will be clearly identified prior to implementation. This includes but is not limited to flagging site boundaries.
ARCH-2	Any project activities within site boundaries will adhere to Standard Resource Protection Measures as approved by the Forest Heritage Program Manager and documented in the Archaeological Survey Report.
ARCH-3	If any late discoveries of human remains or sites not previously recorded are identified during project implementation, work in the immediate area will stop and the District Archaeologist and Heritage Program Manager will be contacted.
WL-1	To avoid disturbance to potentially breeding northern spotted owl, in or near the project area, project activities that involve louder than ambient noise levels will be prohibited from February 1st - July 9th each year. This is in conformance with CDFW's restriction for northern spotted owl, other raptors, and migratory birds. However, a more restrictive time frame will be implemented to avoid impacts to other potentially nesting birds within riparian habitat. Ground disturbing activities and those resulting in noise significantly higher than ambient levels will be restricted until August 1st.
WL-2	Prior to working at individual features within the project footprint, an individual will precede the equipment on foot to displace fish and wildlife and prevent them from being injured. Any fish or wildlife in the work area shall be flushed in a safe direction away from the project site.
WL-3	Due to concern regarding the possibility for the ponds on site creating habitat for invasive American bullfrogs (*Lithobates catesbeianus*), monitoring for presence of the species will occur monthly for 3 years following implementation of the project. Monitoring will continue for another 2 years several times per year following implementation for a total of 5 years of post-implementation monitoring, at which point the need for continued monitoring will be assessed. If bullfrogs are observed the ponds will be re-evaluated to determine the appropriate action.

Design Feature	Description
WS -1	For activities that occur within Riparian Reserves, the Normal Operating Season (NOS) will be June 1st to November 15th. Ground disturbing activities will also be restricted during periods of wet weather during the NOS. See BMP 1.5 (Appendix B). However, the more restrictive CDFW NOS of "June 15th to November 1st, or the first significant rainfall, whichever comes first", will be applied to this project. Additionally, the State Water Resources Control Board Construction General Permit Waiver requires that all site stabilization and erosion controls be completed by October 23rd.
WS-2	Mulch and/or seed areas disturbed by restoration activities where sufficient levels of soil cover are lacking.
WS-3	Erosion control and other requirements to protect water quality are described in the BMPs (Appendix B). If "conditions arise or change in such a manner as to be considered deleterious to aquatic life, operations shall cease until corrective measures are taken" by CDFW.
WS-4	The designated project drafting site is within a Pacific salmonid-bearing stream reach. Therefore, *NOAA Fisheries Water Drafting Specifications* guidelines will be used. They include, but are not limited to, the following: 1. When in habitat potentially occupied by Chinook and Coho salmon, intakes will be screened with 3/32-inch mesh for rounded or square openings, or 1/16-inch mesh for slotted openings. When in habitat potentially occupied by steelhead trout, intakes will be screened with 1/8-inch mesh size. Wetted surface area of the screen or fish-exclusion device shall be proportional to the pump rate to ensure that water velocity at the screen surface does not exceed 0.33 feet/second. a. Use of a NOAA approved fish screen will ensure the above specifications are met. 2. Fish screen will be placed parallel to flow. 3. Pumping rate will not exceed 350 gallons-per-minute (gpm) or 10% of the flow of the anadromous stream drafted from. 4. Pumping will be terminated when tank is full. For any water drafting that occurs in non-fish bearing waters, Forest Service BMP 2.5 defines restrictions (Appendix B). All water drafting will avoid having any effect on the amount of cold water in thermal refugia at creek mouths and seeps.
WEED-1	Equipment will be washed to prevent the spread of invasive species, appropriate equipment cleaning procedures will occur prior to moving to the project area, and after leaving the project area.
WEED-2	Wherever seed and/or straw is used to restore areas of ground disturbance, certified weed free seed and straw will be specified in the contract and used during implementation and any follow up treatments. Only native species will be used for seeding areas of disturbance.

Design Feature	Description
WEED-3	Priority noxious weed infestations will be flagged on the ground prior to project implementation. Known infestations of priority noxious weeds will be treated by either manual or mechanical methods prior to seed set to avoid transporting seeds from the infested locations to other portions of the project area.
WEED-4	The project area will be monitored annually for priority noxious weed infestations for 5 years following implementation, at which point the need for continued monitoring will be assessed. If priority noxious weeds are observed they will be treated by manual or mechanical methods prior to seed set.